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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,745	10/16/2003	Alan Anderson Hoover		8701

7590 12/16/2005

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EXAMINER
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QIN, JIANCHUN

ART UNIT	PAPER NUMBER
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2837

DATE MAILED: 12/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/686,745

Applicant(s)

HOOVER, ALAN ANDERSON

Examiner

Jianchun Qin

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13, 14, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 11, 12 and 15-18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/16/03</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. PTO form 1449 dated 10/16/2003 has been acknowledged. However, the transmittal associated with the 1449 is not found in the application package.

Please be advised.

### ***Claim Objection***

2. Claim 11, 12 and 15-18 are objected to because of the following minor informalities:

In claim 11, page 7, line 9, after the word "occur", please change the comma ",", into a period --.--.

Claim 12 is objected to as being of improper form. A claim should not refer to the previous claim more than once. See lines 1 and 22 of claim 12.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 13 and 14 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

Art Unit: 2837

Claim 13 recites the limitation "said opposing permanent magnet poles" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "said plate" in line 1. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoover (U.S. Pat. No. 6034316) in view of Osborne et al. (U.S. Pat. No. 5932827).

Hoover discloses a sustainer (Abstract; Figs. 4, 6c and 6d) for a musical instrument, said musical instrument having at least one vibratile element (430, 611a-611f) which produces the sound of said instrument, said instrument also having one or more pickups (410, 602) for sensing the vibrations of said one or more vibratile elements, wherein said pickup produces an electrical pickup signal in response to vibrations of said vibratile element or elements (cols. 28-29, lines 54-13), wherein said sustainer comprises: (A) a controller/amplifier (450, 616), said controller/amplifier comprising: (1) at least one signal processing circuit to

Art Unit: 2837

process said pickup signal (col. 30, lines 23-65), (2) at least one amplifier circuit to amplify said pickup signal, to provide a drive signal at the amplifier output (col. 30, lines 23-36); (B) a transducer (620), which attaches physically to the body of said musical instrument (Fig. 6c), wherein said drive signal is applied to said transducer (col. 30, lines 23-36), causing said transducer to produce acoustic vibrations in response to said drive signal (col. 30, lines 23-36), wherein some portion of vibration energy produced by said transducer is imparted from said transducer to said instrument body and to said vibratile elements (col. 30, lines 23-36), wherein said vibration energy which is transferred to said vibratile elements is sufficient to sustain the vibration said vibratile elements (col. 30, lines 23-52); wherein the function of said transducer is to vibrate said body of said musical instrument in response to said drive signal (col. 30, lines 23-52), said transducer being mounted to the body of said instrument (Fig. 6c).

Hoover does not mention expressly: (C) a conductor routing means for combining first and second electrical signals through a single multi-conductor electrical cable, wherein said first signal is said pickup signal of said musical instrument, and said second signal is said drive signal, wherein a first signal conductor which carries said first signal joins to a first conductor of said multi-conductor electrical cable and wherein said second signal cable carrying said second signal joins to a second conductor of said multi-conductor electrical cable; wherein said junctions of said first and second signal conductors to respective said first and second conductors of said multi-conductor cable are attached to said instrument.

Osborne et al. disclose a sustainer for musical instrument, including: a conductor routing means for combining first and second electrical signals through a single multi-conductor electrical cable (col. 5, lines 14-47), wherein said first signal is said pickup signal of said musical instrument, and said second signal is said drive signal, wherein a first signal conductor which carries said first signal joins to a first conductor of said multi-conductor electrical cable and wherein said second signal cable carrying said second signal joins to a second conductor of said multi-conductor electrical cable (col. 5, lines 14-47); wherein said junctions of said first and second signal conductors to respective said first and second conductors of said multi-conductor cable are attached to said instrument (Fig. 13).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teaching of Osborne et al. in the invention of Hoover in order to provide a better mechanism for decreasing direct electrostatic feedback in the sustainer (Osborne et al., col. 5, lines 14-15).

7. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hoover (U.S. Pat. No. 6034316) in view of Wardley (U.S. Pat. No. 6274801) and Osborne et al. (U.S. Pat. No. 5932827).

Hoover discloses a sustainer (Abstract; Figs. 4, 6c and 6d ) for a musical instrument, said musical instrument having at least one vibratile element (430, 611a-611f) which produces the sound of said instrument, said instrument also having one or more pickups (410, 602) for sensing the vibrations of said one or more vibratile elements, wherein said pickup produces an electrical pickup signal

Art Unit: 2837

in response to vibrations of said vibratile element or elements (cols. 28-29, lines 54-13), wherein said sustainer comprises: (A) a controller/amplifier (450, 616), said controller/amplifier comprising: (1) at least one signal processing circuit to process said pickup signal (col. 30, lines 23-65), (2) at least one amplifier circuit to amplify said pickup signal, to provide a drive signal at the amplifier output (col. 30, lines 23-36); (B) a transducer (620), which attaches physically to the body of said musical instrument (Fig. 6c), wherein said drive signal is applied to said transducer (col. 30, lines 23-36), causing said transducer to produce vibrations in response to said drive signal (col. 30, lines 23-36), wherein some portion of vibration energy produced by said transducer is imparted from said transducer to said instrument body and to said vibratile elements (col. 30, lines 23-36), wherein said vibration energy which is transferred to said vibratile elements is sufficient to sustain the vibration said vibratile elements (col. 30, lines 23-52), and wherein the function of said transducer is to vibrate said body of said musical instrument in response to said drive signal (col. 30, lines 23-52), said transducer being mounted to the body of said instrument (Fig. 6c).

Hoover does not mentioned expressly: wherein said transducer is attached to said musical instrument by a clamp means having two opposing sides, at least one of said two opposing sides being movable so as to firmly clamp a part of a body of said musical instrument between said two opposing sides of said clamp means; (C) a conductor routing means for combining first and second electrical signals through a single multi-conductor electrical cable, wherein said first signal is said pickup signal of said musical instrument, and said

Art Unit: 2837

second signal is said drive signal, wherein the function of said transducer is to vibrate said body of said musical instrument in response to said drive signal, said transducer being mounted to the body of said instrument; wherein a first signal conductor which carries said first signal joins to a first conductor of said multi-conductor electrical cable and wherein said second signal cable carrying said second signal joins to a second conductor of said multi-conductor electrical cable; wherein said junctions of said first and second signal conductors to respective said first and second conductors of said multi-conductor cable are attached to said instrument.

Wardley discloses a stringed instrument pickup assembly, including: a transducer (12), wherein said transducer is attached to said musical instrument by a clamp means (22) having two opposing sides, at least one of said two opposing sides being movable so as to firmly clamp a part of a body of said musical instrument between said two opposing sides of said clamp means (col. 4, lines 22-57)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teaching of Wardley in the invention of Hoover in order to provide a less-expensive and structurally convenient mechanism for directly mounting the transducer to the body of the instrument (Wardley, col. 4, lines 22-57).

Osborne et al. disclose a sustainer for musical instrument, including: a conductor routing means for combining first and second electrical signals through a single multi-conductor electrical cable (col. 5, lines 14-47), wherein said first



Art Unit: 2837

signal is said pickup signal of said musical instrument, and said second signal is said drive signal, wherein a first signal conductor which carries said first signal joins to a first conductor of said multi-conductor electrical cable and wherein said second signal cable carrying said second signal joins to a second conductor of said multi-conductor electrical cable (col. 5, lines 14-47); wherein said junctions of said first and second signal conductors to respective said first and second conductors of said multi-conductor cable are attached to said instrument (Fig. 13).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teaching of Osborne et al. in the invention of Hoover in order to provide a better mechanism for decreasing direct electrostatic feedback in the sustainer (Osborne et al., col. 5, lines 14-15).

#### ***Allowable Subject Matter***

8. Claims 11, 12 and 15-18 would be allowable if rewritten to overcome the objection set forth in section 1 of this Office Action.

Claims 13 and 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Reasons for Allowance***

9. The following is an examiner's statement of reasons for allowance:

Art Unit: 2837

The primary reason for the allowance of claims 11-18 is the inclusion of the limitations that automatic phase reversal of said pickup signal occurs when said pickup signal amplitude changes from a first amplitude to another, lesser amplitude, such that said change between said first amplitude and said lesser amplitude must exceed a predetermined rate of change, wherein if said rate of change between said first amplitude and said second amplitude is less than said predetermined difference, said automatic phase reversal will not occur, but wherein if said rate of change between said first amplitude and said second amplitude is equal to or greater than said predetermined difference, then said automatic phase reversal will occur. It is these limitations found in each of the claims, as they are claimed in the combination that have not been found, taught or suggested by the prior art of record, which make these claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

#### ***Contact Information***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jianchun Qin whose telephone number is (571) 272-5981. The examiner can normally be reached on 8:00am - 5:30pm.

Art Unit: 2837


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jianchun Qin  
Examiner  
Art Unit 2837

JQ 

December 8, 2005

  
MARLON T. FLETCHER  
PRIMARY EXAMINER